JOY ORGANICS

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Organic Full Spectrum CBD Tincture - Natural
PRODUCT STRENGTH: 900mg
TINCTURE BATCH: 240327B
BEST BY DATE: 3/27/26
HEMP EXTRACT LOT: 230320B

Physical Atttributes

Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber	PASS
Odor	Joy Internal	Characteristic - Olive and Hemp	PASS
Appearance	Joy Internal	Golden to Amber oil in brown glass bottle with dropper.	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	Joy Internal	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	HPLC-UV DAD	LOQ*: ≥ 900 mg / bottle	**1077mg**	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.3% total THC (Full spectrum), mg/bottle	**31mg**	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**Below LOQ**	PASS
Microbial Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram**	**Absent**	PASS
Microbial Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	**Absent**	PASS
Microbial Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	**Below LOQ**	PASS
Microbial Total Coliforms	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	**Below LOQ**	PASS
Microbial Total Aerobic Count	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^3 CFU/gram	**Below LOQ**	PASS
Heavy Metals	ICP-MS	Arsenic (As): ≤1.5 ppm† Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	**Below LOQ**	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb†† Afltoxin B1 < 5 ppb Ochratoxin < 5ppb	**Below LOQ**	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**Below LOQ**	PASS

*Level of Quantification
**Colony Forming Units per Gram
† Parts Per Million †† Part Per Billion

Values expressed in scientific notation.
Examples:
10^2=100
10^3=1,000

Quality Certified — Name — 4/4/24 — Date

2519 S Shields St. #1042, Fort Collins, CO 80526
Tel: (833) 569-7223 www.joyorganics.com

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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
230427B	**Potency**	**28Mar2023**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000239613	27Mar2023	N/A
	Method(s): TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis	Received: 23Mar2023	Status: Active

Cannabinoids

	LOD (%)	**LOQ** (%)	**Result** (%)	**Result** (mg/g)	**Notes**
Cannabichromene (CBC)	0.007	0.021	0.141	1.41	
Cannabichromenic Acid (CBCA)	0.007	0.019	ND	ND	
Cannabidiol (CBD)	0.021	0.056	3.626	36.26	
Cannabidiolic Acid (CBDA)	0.021	0.057	ND	ND	
Cannabidivarin (CBDV)	0.005	0.013	0.024	0.24	
Cannabidivarinic Acid (CBDVA)	0.009	0.024	ND	ND	
Cannabigerol (CBG)	0.004	0.012	0.080	0.80	
Cannabigerolic Acid (CBGA)	0.017	0.050	ND	ND	
Cannabinol (CBN)	0.005	0.016	ND	ND	
Cannabinolic Acid (CBNA)	0.012	0.034	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.020	0.060	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.018	0.054	0.106	1.06	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.016	0.048	ND	ND	
Tetrahydrocannabivarin (THCV)	0.004	0.011	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.014	0.042	ND	ND	
Total Cannabinoids			**3.977**	**39.77**	
Total Potential THC			0.106	1.06	
Total Potential CBD			3.626	36.26	

Final Approval

Sam Smith
28Mar2023
08:52:00 AM MDT
PREPARED BY / DATE

Karen Winternheimer
28Mar2023
08:56:00 AM MDT
APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/a4007bf7-3cdf-48b4-8a02-f0cbaa823fea

Definitions
% = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method).
Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa *(0.877)) and Total CBD = CBD + (CBDa *(0.877)).

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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
240327B	**Residual Solvents**	**28Mar2023**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000239617	28Mar2023	N/A
	Method(s):	Received:	Status:
	TM04 (GC-MS): Residual Solvents	23Mar2023	Active

Residual Solvents

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Propane	94 - 1887	ND	
Butanes (Isobutane, n-Butane)	192 - 3838	ND	
Methanol	56 - 1126	ND	
Pentane	93 - 1865	ND	
Ethanol	93 - 1867	ND	
Acetone	91 - 1823	ND	
Isopropyl Alcohol	95 - 1898	ND	
Hexane	6 - 111	ND	
Ethyl Acetate	93 - 1853	ND	
Benzene	0.2 - 3.9	ND	
Heptanes	97 - 1942	ND	
Toluene	17 - 330	ND	
Xylenes (m,p,o-Xylenes)	118 - 2370	ND	

Final Approval

Sam Smith
28Mar2023
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Karen Winternheimer
28Mar2023
03:46:00 PM MDT
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https://results.botanacor.com/api/v1/coas/uuid/d2c0e254-0295-4e88-a663-42b4e8702ce3

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
240327B	**Heavy Metals**	**29Mar2023**	NA
Matrix:	Test ID:	Started:	Sampler ID:
Unit Co	T000239616	29Mar2023	NA
	Method(s):	Received:	Status:
	TM19 (ICP-MS): Heavy Metals	23Mar2023	NA

Heavy Metals

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.05 - 4.58	ND	
Cadmium	0.05 - 4.54	ND	
Mercury	0.05 - 4.56	ND	
Lead	0.05 - 4.53	ND	

Final Approval

Samantha Smith

Sam Smith
29Mar2023
02:24:00 PM MDT

PREPARED BY / DATE

K Winternheimer

Karen Winternheimer
29Mar2023
02:26:00 PM MDT

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/42581c1a-4e19-48ab-a3fb-85cb50837f92

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
240327B	**Pesticides**	**30Mar2023**	NA
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000239614	29Mar2023	NA
	Method(s):	Received:	Status:
	TM17 (LC-QQ LC MS/MS)	23Mar2023	NA

Pesticides

	Dynamic Range (ppb)	**Result** (ppb)
Abamectin	374 - 2672	ND
Acephate	18 - 2844	ND
Acetamiprid	40 - 2758	ND
Azoxystrobin	45 - 2727	ND
Bifenazate	41 - 2784	ND
Boscalid	66 - 2638	ND
Carbaryl	43 - 2727	ND
Carbofuran	42 - 2705	ND
Chlorantraniliprole	42 - 2649	ND
Chlorpyrifos	55 - 2672	ND
Clofentezine	293 - 2709	ND
Diazinon	289 - 2767	ND
Dichlorvos	274 - 2725	ND
Dimethoate	40 - 2753	ND
E-Fenpyroximate	287 - 2726	ND
Etofenprox	48 - 2703	ND
Etoxazole	306 - 2700	ND
Fenoxycarb	43 - 2757	ND
Fipronil	39 - 2784	ND
Flonicamid	42 - 2787	ND
Fludioxonil	333 - 2624	ND
Hexythiazox	45 - 2742	ND
Imazalil	289 - 2748	ND
Imidacloprid	40 - 2751	ND
Kresoxim-methyl	43 - 2817	ND

	Dynamic Range (ppb)	**Result** (ppb)
Malathion	279 - 2740	ND
Metalaxyl	44 - 2755	ND
Methiocarb	40 - 2669	ND
Methomyl	42 - 2802	ND
MGK 264 1	175 - 1559	ND
MGK 264 2	119 - 1122	ND
Myclobutanil	47 - 2696	ND
Naled	50 - 2695	ND
Oxamyl	44 - 2792	ND
Paclobutrazol	49 - 2706	ND
Permethrin	261 - 2620	ND
Phosmet	40 - 2745	ND
Prophos	296 - 2692	ND
Propoxur	40 - 2711	ND
Pyridaben	311 - 2711	ND
Spinosad A	34 - 2208	ND
Spinosad D	54 - 492	ND
Spiromesifen	284 - 2702	ND
Spirotetramat	276 - 2790	ND
Spiroxamine 1	19 - 1142	ND
Spiroxamine 2	24 - 1509	ND
Tebuconazole	274 - 2734	ND
Thiacloprid	43 - 2751	ND
Thiamethoxam	44 - 2778	ND
Trifloxystrobin	40 - 2722	ND

Final Approval

Karen Winternheimer
30Mar2023
12:35:00 PM MDT
PREPARED BY / DATE

Sam Smith
30Mar2023
12:51:00 PM MDT
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https://results.botanacor.com/api/v1/coas/uuid/a826fdbf-61e8-427d-8ce7-eedfd4a70b27

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range
ppb = Parts Per Billion

Cert #4329.02
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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
240327B	**Mycotoxins**	**29Mar2023**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000239618	28Mar2023	N/A
	Method(s):	Received:	Status:
	TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins	23Mar2023	Active

Mycotoxins

	Dynamic Range (ppb)	**Result** (ppb)	**Notes**
Ochratoxin A	1.77 - 123.37	ND	N/A
Aflatoxin B1	1.01 - 31.98	ND	
Aflatoxin B2	1.01 - 31.70	ND	
Aflatoxin G1	1.14 - 31.51	ND	
Aflatoxin G2	1.11 - 32.08	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval

Samantha Smith

Sam Smith
29Mar2023
06:44:00 AM MDT

PREPARED BY / DATE

K Winternheimer

Karen Winternheimer
29Mar2023
06:47:00 AM MDT

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/e33b9ccb-7a4d-49a7-a922-7d5dcbbad087

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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CERTIFICATE OF ANALYSIS

900mg CBD Full-Spectrum Tincture- Natural

Batch ID or Lot Number:	Test:	Reported:	USDA License:
240327B	**Microbial Contaminants**	**01Apr2024**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Finished Product	T000275812	28Mar2024	N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 28Mar2024	Status: Active

Microbial Contaminants

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	None Detected	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Brett Hudson
01Apr2024
04:02:00 PM MDT

PREPARED BY / DATE

Brianne Maillot
02Apr2024
06:52:00 PM MDT

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/c26c9c09-8b58-4a5c-9329-9c1d73e01592

Definitions
* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10^2 = 100 CFU, 10^3 = 1,000 CFU, 10^4 = 10,000 CFU, 10^5 = 100,000 CFU
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

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